

THE
LUDLOW
SYSTEM
OF
SLUGLINE
COMPOSITION
—
McMURTRIE



The Ludlow System



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THE
LUDLOW
SYSTEM
OF
SLUGLINE
COMPOSITION

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LUDLOW TYPOGRAPH COMPANY
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THIS article on the Ludlow system of slugline composition was written at the request of the Editor of The Inland Printer for its special equipment number of August, 1927. Due to limitations of space it appeared in that issue in somewhat abbreviated form. It is here reprinted in full as originally written.



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I



THE task of the conscientious printer of the present day, so far as composition is concerned, is not only to set type well, but to set good composition economically and speedily. There are few printers in the happy position of being able to do composition the one best way regardless of expense. Most of us must strive for the best results attainable within reasonable limits of cost.

There is much bad composition done today and any method or improvement that will raise the standards of everyday typesetting renders a definite service to the cause of typography. The common tendency with every new development is to discount its possibilities, but past history in the development of printing technique should have taught us that almost nothing is impossible. It therefore behooves those printers who are not hidebound reactionaries to weigh carefully the merits and demerits of any new device with a promising possibility of raising standards or reducing costs.

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Type casting and type composition, by the standard method, have not changed in any fundamental characteristics since the days of Gutenberg. What changes have occurred have been in the nature of mechanical improvements, almost all of which have brought about greater economy and speed in the process of composition, rather than an improvement of quality.

The invention of the linotype is said to have made possible the daily newspaper as we have it today. But in its early years it made no impression at all on quality composition, for its product was poor. The development of the monotype made possible for the first time type composition by machine which measured up to high typographic standards. It spaced better than the linotype, cast a better face and the letters were much more closely fitted.

From five to ten years ago the linotype was unfitted for any composition making pretense to quality. The side walls of the matrices as then manufactured made close fitting impossible. The letters were seldom well aligned and small capitals particularly never failed to disclose the manner of their setting. The slugs were porous and spongy and the face was not good. The spacing between words was much too wide. The italics, being of necessity confined to the rectangle of the face of the matrix, could not be kerned and a normally designed italic was, therefore, out of the question. Added to these disadvantages, there was hardly a good type face among the matrices offered.

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During this period, the monotype was better on almost all these counts for quality work. It gave closer fitted and closer spaced composition, a better cast type face from harder metal, and due to the operation of the centering pin, the letters were almost invariably well aligned, and the process of casting permitted a kerning italic. In type design, the selection was superior to that offered on the slug machines.

So far, we have referred only to text or body composition. The monotype had one other advantage. It could be used to cast type from 14 point to 36 point for hand composition; this making it possible for a printer equipped with a caster and a supply of matrices to provide an unlimited amount of type for display composition. An added advantage was that this type did not need to be distributed—it could be dumped after using and new type cast for use another time. This made it unnecessary for a printer to carry large amounts of foundry type, as he could make what he needed when he needed it. Types above 36 point in size had still to be purchased from the foundry. This left the process of hand composition just where it was. It eliminated distribution but added the cost of casting type as an offset.

During the last five years the keyboard slug composing machines have made tremendous strides. They have reduced the porosity of their slugs; they have cut down the thickness of matrix side walls and made possible close fitted composition and, with narrow spacebands, have enabled the operator to deliver

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close word spacing. The one barrier they have not been able to surmount is the kerning of italic. A noble attempt has been made in several faces to get around the difficulty by a large number of side sorts of letters in combination, but these are impractical for fast and economical keyboard composition—the one justification of machine work.

The keyboard slug machine manufacturers made one great advance in offering keyboarded composition above twelve point, and this was a real boon. With type of normal length descenders and ascenders, twelve point is a comparatively small type. The linotype and intertype made possible good and economical composition in fourteen, eighteen, twenty-four point and even larger, while the monotype had nothing very practical to offer for this requirement. In this field the British monotype was in advance of the American machine.

This large type development made possible a good deal of display composition on the keyboard machines. Newspapers have come to keyboard almost all their column heads in slug form. But changes from one size to another and from one face to another are cumbersome, and the matrix and magazine equipment very costly. For varied composition such as is encountered in the run of advertising or job work, the larger sizes on the linotype have not proved highly successful.

Out of the printer's experience with single type and slug composition has emerged one indisputable conclusion. Composition in slug form handles after

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original setting for half the cost of handling single type composition. It can be picked up easily and put in a form without concern. In galleys it will stand without being locked up with side sticks.

And consider one other point of importance. I was soliciting the printing of a large book of a reference character. The customer asked, "How will you set it, monotype or linotype?" My answer was, "Monotype." "Then we cannot consider you," he replied. "When we thoroughly proofread the job once, we must make sure it is printed correctly. Once we used monotype and after we had read it once, further errors occurred at every successive stage. Some commas dropped off the end of lines, some letters became inverted or transposed and there seemed no insurance against such occurrences except re-reading the whole text at each successive stage." While in correcting one error in a slug line another error may be made, once the job is proofread and revised, the slugs will stay as they are until they are printed.

In the old days, there was hardly any such thing as display composition. About the only requirement was straight text, for advertising notices as well as literary and editorial matter. The growth of advertising has brought display composition to a position of great importance and the volume of such composition now set every day is well nigh inconceivable. There have, therefore, been many efforts to reduce the cost and increase the speed of this work.

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II

The most recent development with this end in view has been the perfecting of the Ludlow system, which is now being widely used for advertising composition. I have been asked by the editor of the *INLAND PRINTER* to study and report on the performance and possibilities of this system and its place in modern composing-room practice. Let us first describe the machine and its manner of operation.

The machine is a slug-casting device reduced to its simplest terms. With it is supplied an assortment of matrices arranged in drawers or cases in a cabinet by the side of the machine. The compositor uses a special stick in which the matrices are set by hand, and spaced and justified to the desired measure. The stick is then placed in the machine and a lever pressed, which in a few seconds causes a slug to be cast from the line of set-up mats. Then the stick is withdrawn, and while the slug is being cooled, trimmed and delivered, the matrices are immediately distributed into the compartments in the drawer. The compositor then proceeds to set the next line in the same manner.

All type lines to be spaced twelve points apart or more are ordinarily cast with the same mold, which is twelve points in body and either twenty-one or twenty-two and one-half picas in length, according to whether the composing-room is that of a job shop or a newspaper. If desired, however, a mold which is only six points in body can be quickly substituted in

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either measure. When lines are set in any type size larger than the body size of the mold, the face portion of the slug overhangs the shank portion at top and bottom, the parts thus overhanging being supported by blank make-up slugs which may be automatically cast on the machine in spare time. In other words, a slug of large point size as cast looks in cross section like the illustration on the left; when made up with the supporting material like that on the right.



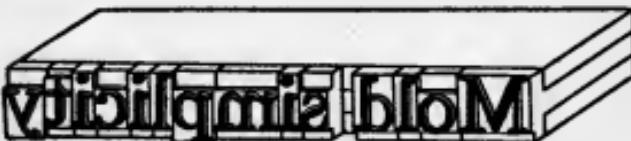
On large jobs to be printed from type, the slugs can be made up with wood reglet supporting the overhang. This naturally makes a much lighter form to handle.

When a longer measure has to be set, it is set in a longer stick, but cast on two or more interfitting slugs. In machine composition, slugs have been butted from time immemorial. But the break has almost always been visible and the spacing in the different sections of the whole line has been uneven. With the Ludlow, however, the whole line is spaced as desired—as one line. The division is then made between letters and such part of the face of the type as exceeds the measure of the mold or slug-shank casts to overhang, being supported by a blank on the following

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slug, which casts automatically to just the right width to receive this overhang. In short, when these automatically interfitting slugs are placed end to end in the form, the resulting complete line prints exactly as though it had been spaced and cast as a single long slug of the measure of the full length line.

Until recently, full width sixty point caps were the largest characters in which Ludlow composition matrices were available. Up to this type size all matrices are of the same shape and size (except of course as to width), whether the type size be six point or sixty point. These matrices are all set in the same sticks and the same spaces are used for all these type sizes. This universal applicability of spacing material (which is made on the point system setwise) is a feature of real importance. One amply filled drawer of spaces and the composing room is supplied for its spacing requirements.



FACE OF A LUDLOW SLUG

Ludlow composition matrices are now available in sixty and seventy-two point sizes, full-width capitals and lower case, and eighty-four point fonts in capitals only. These big type matrices are of a larger size and have their own size of sticks and spaces. All matrices in this higher type size range are of the

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same size (except as to width) and all are set in the same sticks and with the same spaces.

Having matrices in this larger range of sizes does not, however, affect the casting machine itself, as the up-to-date Ludlow machine casts slugs in any type size, from the smallest to the largest, regardless of matrix size, and without any machine changes whatsoever.

The size of the overhang is determined by the recess in the face of the mat. Ten point and forty-eight point can be set in the same line. In fact, the only limitation on combination of different size types in the same line is that the extra-large matrices cannot be set with matrices of the normal size in the same stick. Each matrix determines the size of its own overhang.

III

If a twenty-one pica mold is on the machine and eighteen pica matter is to be set, the lines are justified to eighteen picas and the extra three picas cut off the slugs with a slug-cutter or composing-room saw—if necessary. If there is white space available, the excess length of slug can remain. The same applies where two or more slugs are necessary to complete the line.

Superficially, such a hand-setting, slug-casting combination might seem like a ridiculous process, with no possible advantages over hand composition of foundry or sorts-caster type. The idea was ridiculed by prominent printers when it was first pro-

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posed and the machine has had to contend with aggressive resistance ever since. I have a little sympathy with the original skeptics, however, for I admit I would not have been very enthusiastic over the project myself before its demonstration in actual daily operation.

If matrices have to be set by hand and then distributed, why not hand set foundry type and distribute it, and be free of the expense of a machine and its maintenance? Or better still, hand set sorts caster type and not distribute it?

The answer of the Ludlow advocates is, first of all, that display composition can be set faster with their system than by hand. The proof of the pudding is in the eating. Theories do not avail. To test this claim I made up two typical display advertisements, which are here reproduced in miniature. They do not represent fussy or decorative typography, but are representative of the majority of newspaper and magazine display composition. Each advertisement was set for three columns, forty picas wide. They were sent first to one of the leading advertising composition houses in Chicago, with a request to give them to a fast compositor and let me have an exact record of the time required to deliver them to the proof press. I then handed the *same* pencil layouts to a Ludlow compositor and had him set them while I looked on. The time records are as follows:

	HAND SET	LUDLOW SET
Advertisement A	2 hours	48 minutes
Advertisement B	2 hours	1 hour 9 minutes

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On each of the advertisements set by hand the correction time was twelve minutes. On the Ludlow set advertisements the correction time on A was twelve minutes, on B none at all.

These figures are more eloquent than theories, and

**Do Your Customers
Like Mystery Stories?**

*Here is one with thrills
and mystery a-plenty*

SILENT GUESTS

By A. E. FORREST

A CASTLE in the Canadian wilderness, a house full of eccentricities, a pack of weird incidents, a lonely bachelor and his charming maid, an accumulated fortune, voices from the dead, a secret vault—all these, and more!

\$2.00

Pascal Covici, Publisher, Inc.
Chicago

Send Your Orders at Once

ADVERTISEMENT A—HAND TYPE SET

I admit that they do not seem plausible. Why can better speed be made by the Ludlow method?

In the first place the Ludlow operator is handling matrices of considerable size, which vary only in thickness and are always in the same relative position in case, stick, and in handling. When a compositor picks up a piece of type out of the case he must see that the face is up, and he must feel the nick and turn the type to the proper position. He reaches for a type

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at a time, carries it to the stick and reaches back for another. The Ludlow operator picks up five or more letters successively from the case between his fingers and then carries this group to the stick for deposit. This results in real time saving.

Do Your Customers Like Mystery Stories?

*Here's one with thrills
and mystery aplenty*

Silent Guests

By A. E. Forrest

A smile in the Canadian
wilderness, a housefull
of ex-convicts, a pack of wolf
hounds, a secret society and
its charming sister, no
achieved fortune, violence from
the dead, a secret vault—all
these, and more!

\$2.00

Pascal Covici, Publisher, Inc.
Chicago

Send your orders at once.

ADVERTISEMENT A—LUDLOW SET

The character is stamped on the back of each matrix so that the line can be read in normal order (not reversed) before the line is cast. Rules engraved on the back of the mats reveal immediately the presence of a mat of wrong point size or wrong font. These features make for accuracy in the first casting and reduce the cost of corrections.

An interesting feature is that spaces used for word or letter spacing are slightly longer at the back than

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letter matrices so that they can be picked out of a line with great ease in the "trial and error" method of justifying hand composition—in marked contrast to the difficulty of extracting spaces from a line of type in a composing stick. With hand set type they

Friday is Bargain Day

Our Special for Today

Hamburg Steak 22*

Round Steak	—	31*	Cream	—	15*
Veal Roast	—	29*	Fresh Ham	—	32*
Potatoes	—	79*			
Radicchio	—	16*			
Strawberries	—	28*			

Come Early for the Best Service

Moody's Meat Market

ADVERTISEMENT B—HAND TYPE SET

are, of course, much harder to reach than the types which rise so far above them.

IV

Another feature contributing to speed, in comparison with hand composition, is that justification need not be so tight. The line must be spaced to look right, but the compositor has no worries about the behavior of the type in lock-up or on press. This is, of course, a simpler spacing requirement.

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Then again slug material assembles faster. It is a common misconception that a compositor spends most of his time setting type out of the case. He does not. A large percentage of his effort is devoted to finding the right case, cutting rules and leads, mak-

Friday Is Bargain Day

Our Special for Today

Hamburg Steak 22c

Round Steak ~~24c~~ **31c** Cream Cheese ~~12c~~ **15c**

Veal Roast ~~24c~~ **29c** Fresh Ham ~~12c~~ **32c**

Potatoes ~~12c~~ **79c**

Radishes ~~12c~~ **10c**

Strawberries ~~25c~~ **28c**

Come Early for Best Service

Moody's Meat Market

ADVERTISEMENT B—LUDLOW SET

ing up the advertisement, etc. Much of his time, alas, is often spent in looking for sorts missing from the cases. With the Ludlow, there is nothing to go after or look for. Everything is at hand, and as much as can be required.

Distribution is fast, the compositor picking up six or seven mats at a time and dropping them successively in their respective compartments in the case. And when the slugs are delivered by the machine they can be handled without particular care, for no

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letters will drop off the ends of the line and there is no tendency to pi.

It has already been pointed out that a vital obstacle which keyboard slug machines have not been able to overcome lies in the necessity of kerning any well designed italic. This was their Waterloo, and in circumventing the difficulty they have been forced to distort their italics and make them weak and characterless. Now a good italic is a beautiful letter and is properly used to a considerable extent in advertising composition. The type-foundries and the sorts casting machines can make a kerning italic, but it is a delicate affair. It will not, of course, stand the pressure of stereotyping, but it also will not stand with any degree of dependability the strain of ordinary presswork. I recently printed nine hundred copies of a fine book and when the sheets were inspected, the kern of an important letter in the colophon (hand set in foundry italic) was found broken. The form was reprinted, this time electrotyping the foundry type. There was extra expense for the paper spoiled, the presswork wasted, and the electrotypes.

The Ludlow system, by a clever and original principle, offers the printer italic of full-kerning design in which there are no kerns to break off. This is accomplished by slanting matrices which can be set alone, or in combination with roman by simply inserting in the stick an angular spacing unit where the italic begins and another where it leaves off. When the slug is cast in one piece of metal, the kerning portions have exactly the same adequate support

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as the main portions of the letters. This, I need hardly point out, is a development pregnant with importance. It enables a printer, for example, to put Caslon swash characters on a press and print them without anxiously watching every impression. An example of the way Ludlow italic sets up may be seen in the following line, no part of which can break off in printing.

Ludlow Caslon Italic

In recounting this unique advantage, it is only fair to note one slight disadvantage which it shares in common with all other slug casting machines, *i. e.*, the impossibility on a Ludlow of kerning roman. This does not at all affect the faces in most general use, and on those of special design; the only letter affected to any degree is the lower case f. However, f-combination ligature matrices are available for Caslon and other faces in which this disadvantage might be felt. And of course, with a hand-set system, objections to the use of such supplementary ligature matrices are really of minor importance. In any event, the handicap is far less serious than the inability to kern italic.

As to porosity of face and slug the Ludlow has, in common with the linotype, been making constant improvement. At the present time porous slugs give very little trouble. As to metal temperature, the machine is equipped with an automatic thermostat which turns off the current in the heating unit when

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the heat reaches 540 degrees and turns it on again when it falls to 525 degrees. Within these limits there is practically no change in casting quality.

It is said the overhanging slugs tend to break off. The answer to this is that the machine is being used in more and more newspaper composing rooms using the rolled dry mat stereotypes. This is about as heavy pressure as any type form is likely to undergo. Then the roll of the press is from one side of the newspaper page to the other, so that the face of the type receives the constant support of the main center shank, with which it is integrally cast. But the overhanging parts of the face are amply strong for all ordinary—and some extraordinary—requirements.. They are .153 inch in thickness, more than three times as thick as the overhang of advertising figures, etc. (.043 inch), on slugs of keyboard composing machines.

V

The printer buying foundry type for display composition faces the necessity of constant purchase. Every new job that comes in may exhaust his supply of a given face or size, and this is serious for more reasons than one when the printer is not located within messenger service of Jersey City or Chicago. This experience led many to embrace eagerly the facilities offered by the sorts casting machines. Matrices were expensive, but once bought that was the end of expense for that face and size. In wisely operated plants it has become a rule to spend \$60 for matrices rather than \$20 for type, when a new

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face was needed, for the \$60 was the end of the story. This principle has been well established.

A new plant installing a sorts caster to provide for display composition and having bought its mats, faces another very consequential investment before it can begin operation. It must buy metal and pay for the labor required to cast a full supply of sorts. These must then be laid in the cases. Spacing material must be cast for each size type used and kept on hand in large quantities. And if the plant is to operate effectively, some workman must be assigned the duty of constant inspection of cases to see that they are replenished. With large sizes a case runs out of one or two letters very quickly—these must be supplied from a storage cabinet or the caster room.

Then again few plants using this system actually dump all type. The majority have found it far more economical to distribute twenty-four point and larger than to re-cast and lay the new type in cases.

With sizes above thirty-six point (with one machine forty-eight point) there was another complication, because they could not be cast, and the printer had to depend on foundry type. The monotype giant caster now casts up to seventy-two point, but it needs a large plant indeed to support one and carry the investment. We all know also how few letters of sixty point go in a compartment of a California job case. A line or two and letters are exhausted.

The Ludlow casts up to seventy-two point (in one face to eighty-four point) and there are no sorts to cast or type to carry in stock and replenish. In

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the process of setting, the type is cast. A Ludlow equipped shop can set a dozen full newspaper pages or large broadsides in sixty point without the slightest inconvenience. No foundry type composing room in the country could do it.

In other words, the Ludlow provides the equivalent of an unlimited supply of new type—without carrying any stock in addition to the matrices, except some bulk metal. There is no metal tied up in sorts in cases and storage cabinets—the only metal in the office is in live jobs. The investment in metal is therefore much less. It requires no labor to keep the composing room supplied with material and the cases checked up.

The floor space required for type cases and storage cabinets is spectacularly reduced. This has a very distinct bearing on costs. Some newspaper composing rooms handling today double or triple the display composition they set a number of years ago are setting it on the Ludlow with the same composing room floor space as that required for hand set type composition of the smaller volumes. For other printers it has obviated the necessity of moving to larger quarters.

With Ludlow composition, it is possible to save money on repeat jobs by holding them standing, where it would be next to impossible to tie up more or less permanently quantities of large foundry types.

The face of the matrices is in a recess and cannot therefore be damaged by any ordinary wear and tear. The matrices are driven in brass with steel punches,

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the matrix blank being so held that metal displaced is either compressed or forced up into the counter, instead of bulging the side of the matrix. As there is no frictional wear in the process of composition, justification, or distribution, the life of the matrices is to all intents and purposes unlimited.

VI

If, therefore, the system provided unlimited type supply, required modest investment, occupied little floor space, and set type speedily and economically, it would still not deserve careful consideration by printers with high standards of workmanship if it did not deliver good composition, and composition giving satisfactory printing results. The Ludlow system has been severely attacked by competitors or hostile critics on these grounds. Let us consider the situation not theoretically, but practically.

So far as composition goes, there is practically nothing which can be done with movable types in a compositor's stick which cannot also be done with matrices in a Ludlow stick. So far as depth of cut, sharpness of face, and general accuracy is concerned, the Ludlow slugs are highly satisfactory. The best printing, speaking from the viewpoint of perfection, can be done with hand set foundry type—that is, if you use new type each time and there are no worn or partially worn letters in the font. The advertising composition houses which never print from their type—always electrotyping—approximate this situation, but no general printing office can. When

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foundry type is printed from to any extent, we obtain better printing results from any one of the type-casting machines which deliver new type each time, even though their product is theoretically inferior to *new* foundry type.

And theoretically inferior they all are. The metal is not as hard, the casting temperature not so hot, the jet pressure not as great, and the edges of the face not quite so sharp. I say *theoretically* because it would take a sage of great typographic wisdom to inspect a printed impression of the same roman face in new foundry type, linotype, monotype, and Ludlow—each machine being competently operated—and identify the foundry type with any degree of certainty. For all practical purposes, each machine, properly used, gives good type from which excellent presswork can be obtained.

The height of Ludlow slugs has been claimed by one recent critic to vary greatly, and to make good printing out of the question. I have myself had many slugs cast with an up-to-date machine and have measured them by micrometer. Those up to twenty-four point have all measured within half a one-thousandth of .918 inch, the standard height to paper, but most of them were practically on the dot of .918. Those in large sizes (say forty-eight point, sixty point and seventy-two point) have varied to a slightly greater degree, some a thousandth off in either direction, some a trifle more.

The accuracy of the Ludlow slugs in height-to-paper is accounted for by the fact that the trimming

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knife shearing the bottom of the slug, makes its cut while the slug is still in the mold and its face is still imbedded in the line of matrices. The knife has thus a positive relation to the face of the matrices. On other slug machines the slug is pulled out of the matrices before the foot is trimmed.

One necessity in composition showing much white space is low spacing. The necessity of cutting down the ends of linotype slugs of centered running heads, to preceding line, for example, in jobs to be printed from slugs, is familiar to all. The Ludlow has high and low spaces which can be used at the compositor's option. With low spacing, there is no necessity of cutting down slugs in open display.

As to metal, the Ludlow has a great advantage, in that it uses standard linotype metal, thus obviating the difficulties of keeping separate two different metals used together in the same office.

Mechanically, the Ludlow is a simple device, having less than a thousand parts. When one slug composing machine advertises that it has 910 less parts in one mechanism than its competitor, we get a faint intimation of how many parts either of them has as compared with single type casting machines, the most important point is that there is no wear on the jaws of the mold, so that there is no constantly recurring need of restoring molds to height, with the inevitable variation in the height of type cast before and after such restoration to height.

Compared to most typecasting machines, the Ludlow is a parlor device. It is light, and can easily be

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moved from place to place. Its operation is cleanly and noiseless.

No special factory-trained experts are needed to keep it in order. No specially trained operators are needed. Any good printer can use the Ludlow system effectively after a few hours' practice.

Simplicity is the outstanding characteristic of the Ludlow System. This simplicity obtains with both mechanism and operation and from it comes much of the value and strength in the system.

The Ludlow has one frankly admitted limitation. It sometimes does not deliver an absolutely perfect face on large sizes of heavy black types, and there is provided on the apron of the machine one plate covered with fine emery, another covered with electro-typewriter's finishing paper. Slugs can be printed as cast with reasonably satisfactory results, but the makers of the machine recommend rubbing the face of slugs a couple of strokes on each of these burnishing sheets when the slugs are set in the larger sizes of the heavier faces and the printing is to be upon coated or very hard stock. A recent critic with manifestly inspired animus claimed that this made the slugs less than type high and caused much extra labor in the press-room.

Again leaving theory behind, I micrometered a number of sixty point and seventy-two point slugs before and after this burnishing process. A seventy-two point slug of Caslon Bold was reduced from three-quarters of a thousandth to one one-thousandth in height, a difference too slight to be noticed

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in presswork. In each case the resulting slugs were within two one-thousandths of normal. Similar results were obtained with forty-two point slugs of heavy-faced type.

The burnishing took off quite uniformly one one-thousandth in height. The lowest part of any slug thus burnished was .916, two thousandths below standard. I can hear the erudite critic chuckling with glee and murmuring, "What did I tell you?"

Just what does this mean? Let us micrometer printing material of other character by way of comparison.

Well, new foundry type varies a thousandth in one direction or the other, and foundry type which has been used in a good office varies six to eight one-thousandths. On large type sizes the foundry permits a tolerance of two one-thousandths in either direction. Linotype slugs are found to vary within a range of two or three one-thousandths. Many types from the monotype giant caster micrometered within half a thousandth of normal but some were over two thousandths low.

When it is considered that a single make-ready tissue measures six thousandths in thickness, we get some idea of what these one and two one-thousandths variations mean in the pressroom. If variations in height are no greater than this, they are taken up in the packing. The variations noted, therefore, on type material produced by other machines constitute, therefore, no criticism, but merely indicate the limit of accuracy within which type-making machinery

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operates. As will be seen the Ludlow measures up in accuracy with the best.

There is one other drawback: in most faces the system is not arranged to set solid composition. There must be at least a lead or card between lines of type in order to allow them to lock up properly. If the slug heads were trimmed on the sides—a simple process—this difficulty would be overcome, but the makers believe the slight advantage gained would not compensate for the complications and time required for the additional operation. They further point out that practically all display composition is set leaded, and report that few of their customers have found this limitation a handicap of consequence in actual work. Bear in mind that the system is offered and sold primarily for *display* composition, not ordinarily for setting body matter, for which keyboard slug casting machines are recommended.

VII

Having now outlined the advantages and disadvantages of the system, it will be seen that the preponderance of advantage makes it a valuable aid in setting display composition economically and well. The newspapers, as might be imagined, were the first to adopt the Ludlow. Almost all the large ones (such as the New York Times, New York Sun, Chicago Tribune, Detroit News and many others) use two or more Ludlows and report having found the system satisfactory. Newspapers are being constantly added to the list. This is logical, for it is beyond doubt a

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good system for newspaper ad work. It is also highly advantageous for trade paper printers.

The system is also making progress in the job printing field. In this field its popularity has been greatly accelerated by two features. One is the ease

of recasting lines, thus enabling a printer to set a form sixteen up or thirty-two up to cut a press run, without paying all the profit he might make by doing this to an electro-typewriter. The other is a clever device for setting rule forms, which are frequent in the work of the average job office. The details cannot be here described, but suffice it to say that, by a ridiculously simple device, complicated rule forms can be Ludlow set at a fifth of the former cost.

One such form is reproduced herewith in reduc-

tion. The size of the original type form was approximately three by seven inches. On the Ludlow it was set in twenty minutes; with movable type, hand set, it required two hours, twenty-four minutes of a compositor's time to get it up.

SLUGLINE COMPOSITION

How far can the Ludlow go into the field of fine composition? I feel it has great possibilities in this direction and believe its accomplishment is limited only by the extent of the really good type faces for which matrices are available. Like all type composing and casting machine manufacturers in the early days, a large share of effort in matrix cutting had perforce to be directed toward completion of the "old standbys" demanded by their newspaper customers. But considering this pressure, and also considering how comparatively young the system is, excellent progress has certainly been made. The officers of the company have constantly been looking ahead and have laid out a sound typographic program.

True-cut Caslon is a good face, Ludlow Black satisfactory for heavy display, Caslon Bold is good, and Cameo, a hand-tooled letter, is attractive. The Nicolas Jenson now in progress will add one more good type to the resources of Ludlow users. Other indispensable well-designed types are on the program. As the type range is rounded out, the machine will find a much wider field of usefulness. No composing or type casting machine appeals to the fine printer until he can get on it the types his class of work demands.

In conclusion. A new system of display composition has come into the field and has come to stay. For many classes of work it offers unique advantages and economies. It has possibilities of a still wider field of usefulness. In short, it is a machine which merits the careful consideration of any printer having much display composition to produce.

*O*f this booklet there have been printed in August, 1927, ten thousand copies. The cover, title page, display lines, and all lines in italic are set in *Ludlow True-Cut Caslon*. The text is set in *Lino-type Caslon Old Face*. The rules under the running heads are *Elrod cast*.



